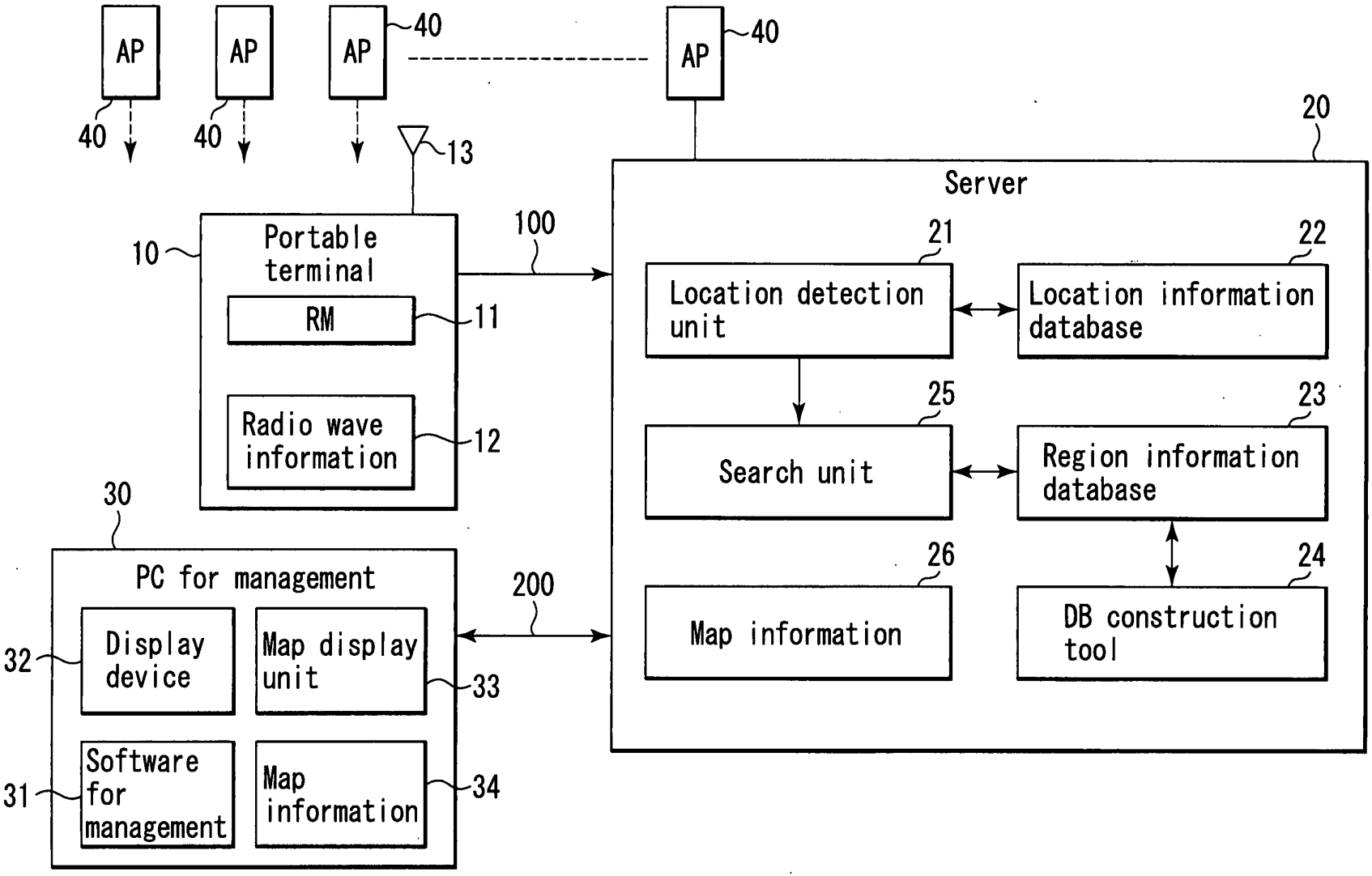
AP
AP
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40
AP
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13
20
Server
10
Portable terminal
100
21
22
Location detection unit
Location information database
RM
11
25
23
Radio wave information
12
Search unit
Region information database
30
26
24
PC for management
200
Map information
DB construction tool
32
Display device
Map display unit
33
Software for management
Map information
31
34

FIG. 1

Range No.	Coodinate 1	Coodinate 2	Floor	Space name	Control code
00102	10, 30	40, 50	3	Laboratory B	office area
00102	40, 40	60, 50	3	Laboratory B	office area
00103	10, 10	40, 30	3	Meeting room A	common area
00104	0, 0	100, 10	3	South-side corridor	common area
00105	0, 10	10, 40	3	Bathroom	private area
00106	40, 10	60, 40	3	Stairwell	common area
00107	0, 40	10, 50	3	Machine room	security area
00106	40, 10	60, 40	4	Stairwell	common area
02007	0, 10	10, 40	4	Bathroom	private area

FIG. 2

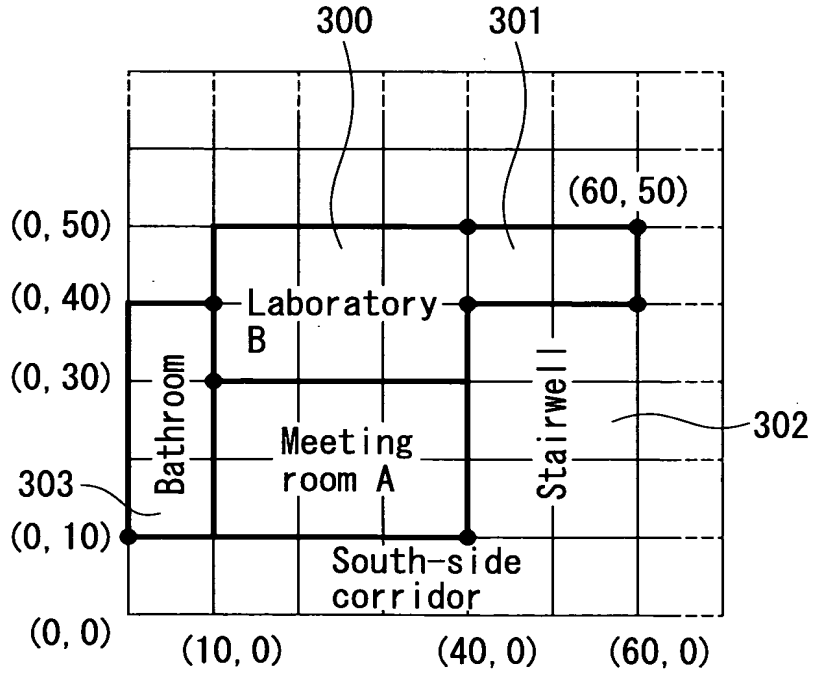


FIG. 3

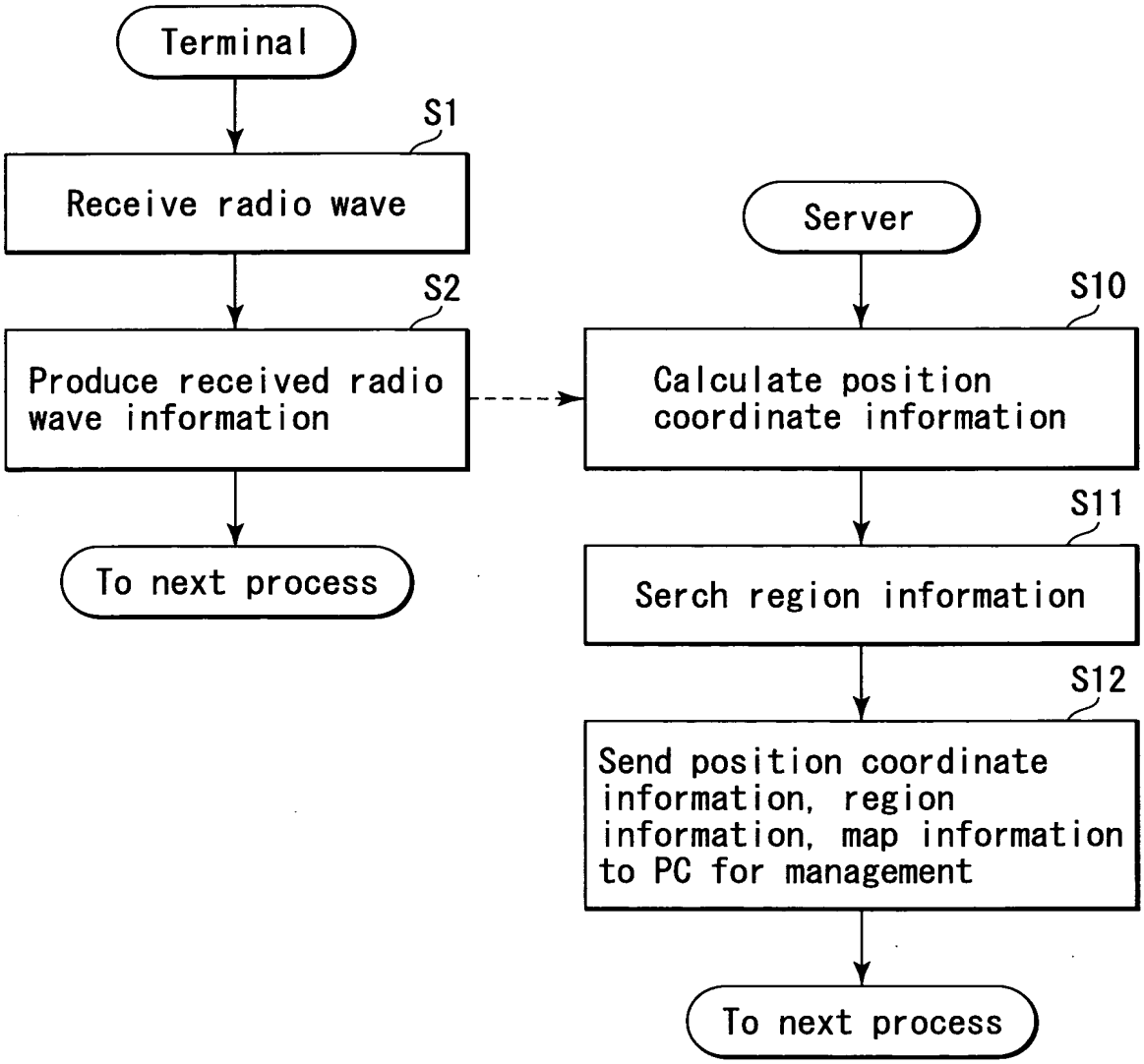

Terminal
S1
Receive radio wave
S2
Produce received radio wave information
To next process
Server
S10
Calculate position coordinate information
S11
Serch region information
S12
Send position coordinate information, region information, map information to PC for management
To next process

FIG. 4

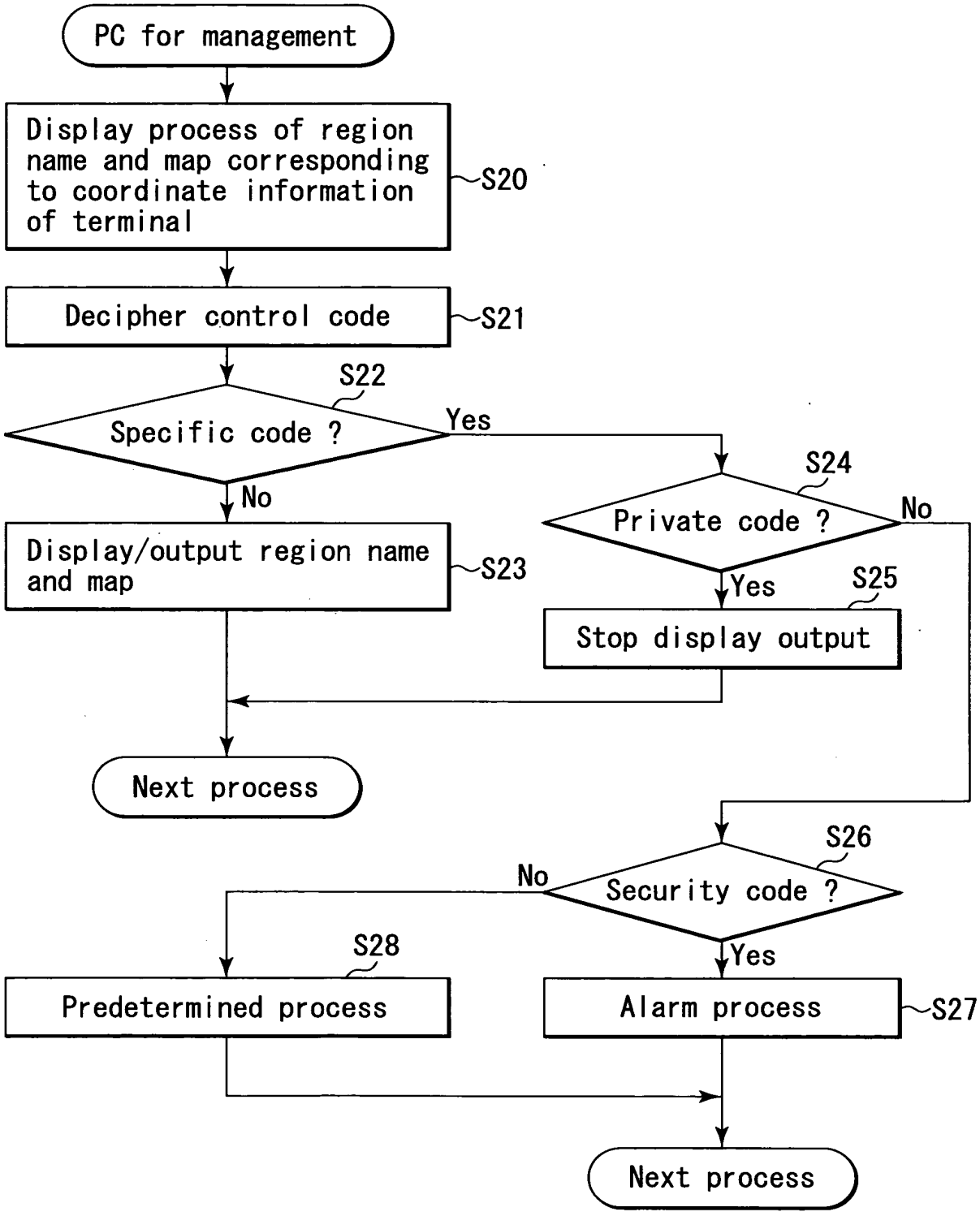

PC for management
Display process of region name and map corresponding to coordinate information of terminal
S20
Decipher control code
S21
S22
Specific code ?
Yes
No
Display/output region name and map
S23
S24
Private code ?
No
Yes
S25
Stop display output
Next process
S26
No
Security code ?
Yes
S28
Predetermined process
Alarm process
S27
Next process

FIG. 5

Range No.	Coodi-nate 1	Coodi-nate 2	Floor	Space name	Entrance/exit		Control code
00102	10, 30	40, 50	3	Laboratory B	15, 30	20, 30	office area
00102	40, 40	60, 50	3	Laboratory B	45, 40	50, 40	office area
00103	10, 20	40, 30	3	Meeting room A	40, 20	40, 25	common area
00103	10, 10	40, 20	3	Meeting room A	15, 10	20, 10	common area
00104	0, 0	100, 10	3	South-side corridor			common area
00105	0, 10	10, 40	3	Bathroom	0, 10	5, 10	private area
00106	40, 10	60, 40	3	Stairwell	40, 10	60, 10	common area
00107	0, 40	10, 50	3	Machine room	5, 50	10, 50	security area

FIG. 6

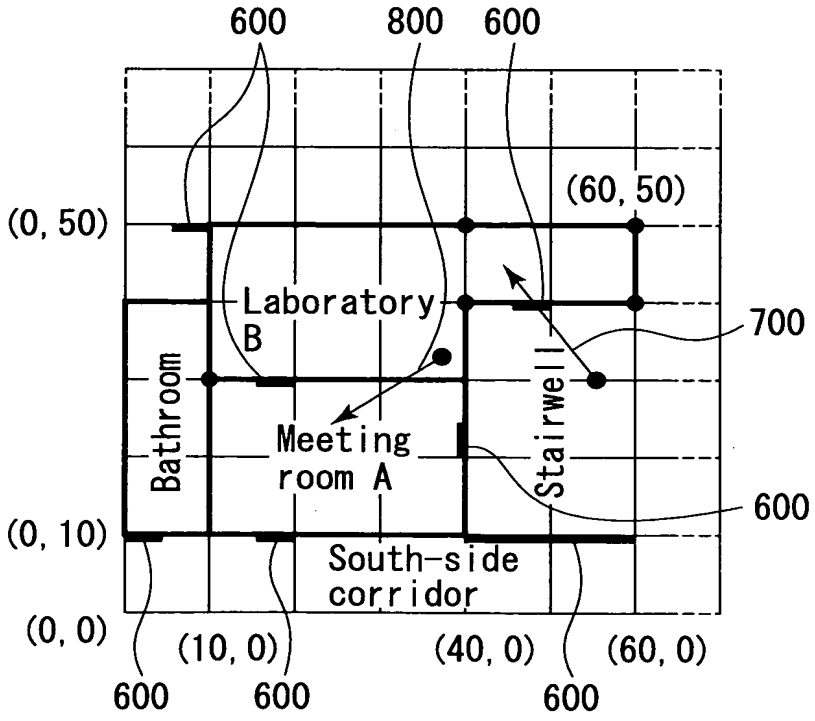


FIG. 7

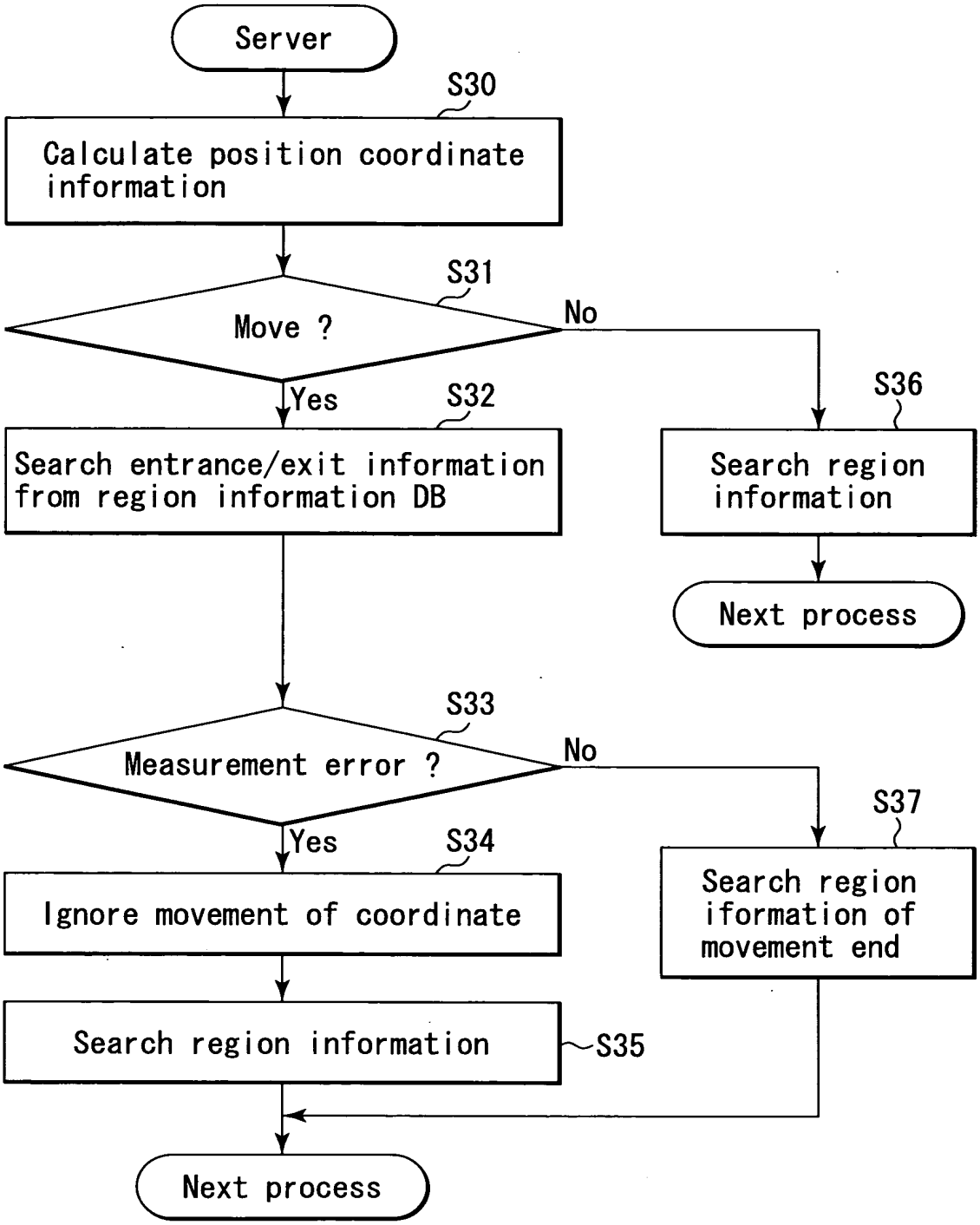
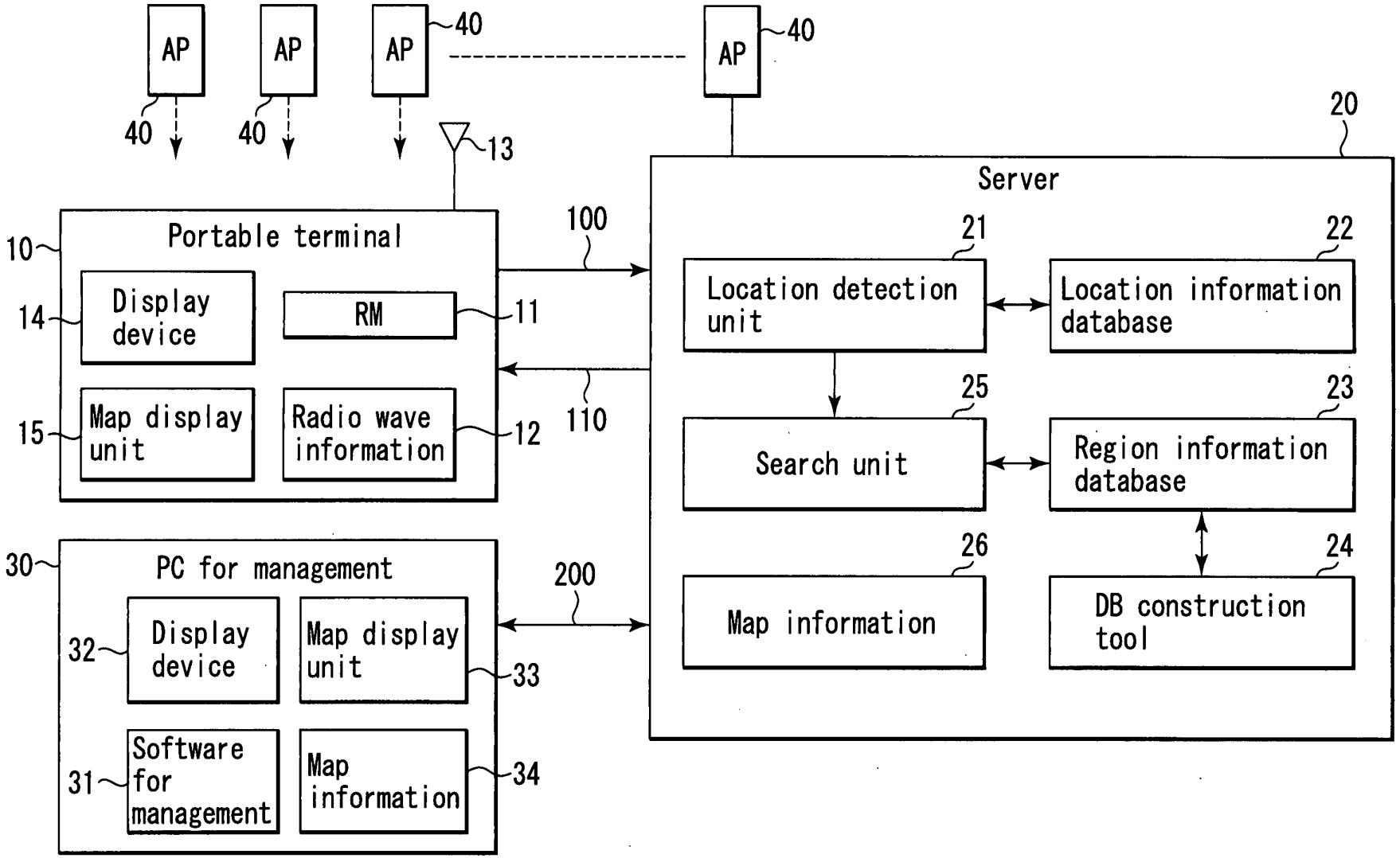

Server
S30
Calculate position coordinate information
S31
Move ?
No
Yes
S32
Search entrance/exit information from region information DB
S36
Search region information
Next process
S33
Measurement error ?
No
Yes
S34
Ignore movement of coordinate
S37
Search region iformation of movement end
Search region information
S35
Next process

FIG. 8


AP
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AP
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AP
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40
40
13
20
Server
100
Portable terminal
10
21
22
Location detection unit
Location information database
14
Display device
RM
11
25
23
Search unit
Region information database
15
Map display unit
Radio wave information
12
110
26
24
30
PC for management
200
Map information
DB construction tool
32
Display device
Map display unit
33
31
Software for management
Map information
34

FIG. 9

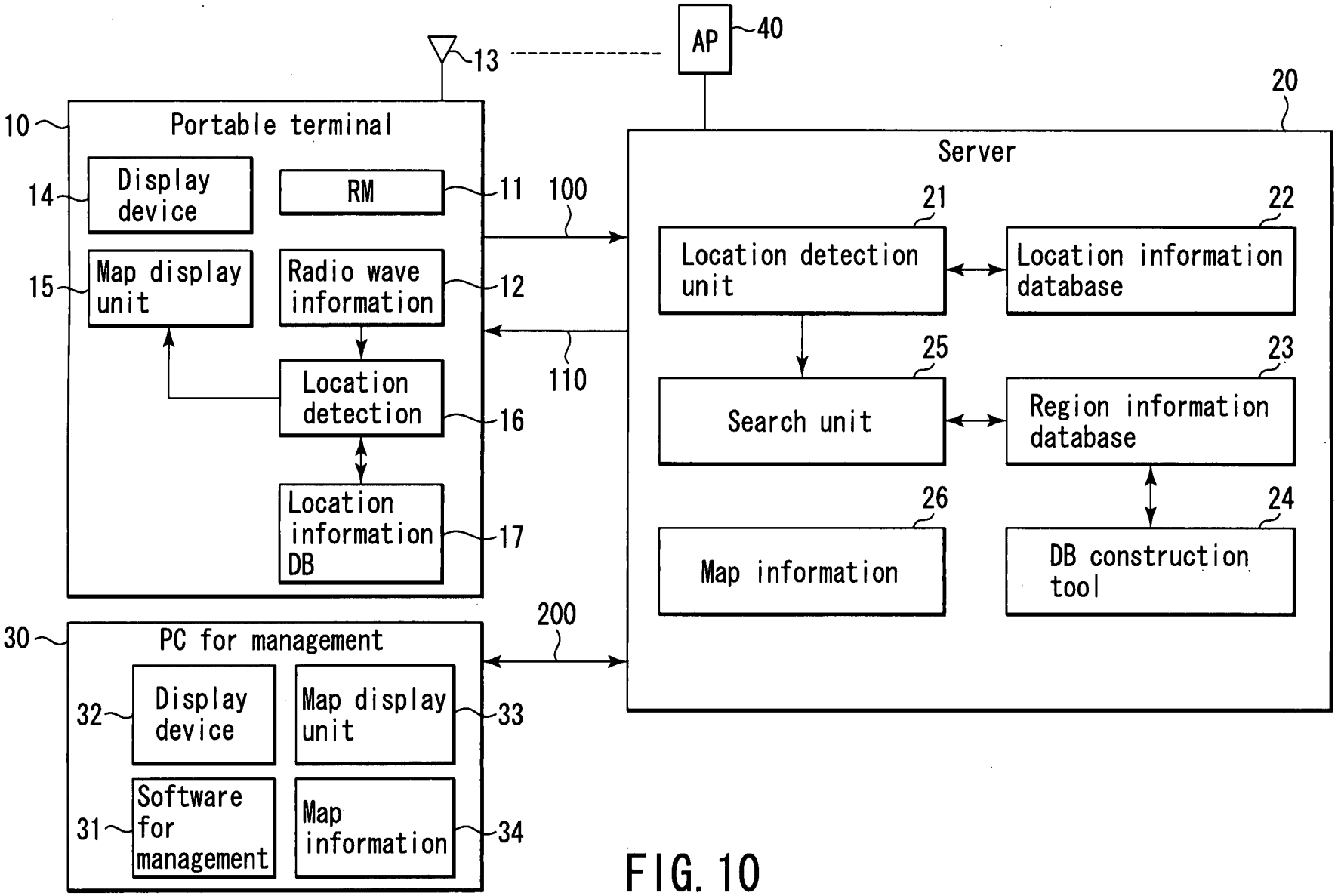

AP
40
13
20
10
Portable terminal
Server
14
Display device
RM
11
100
21
22
Location detection unit
Location information database
15
Map display unit
Radio wave information
12
25
23
Search unit
Region information database
Location detection
16
110
Location information DB
17
26
24
Map information
DB construction tool
200
30
PC for management
32
Display device
Map display unit
33
31
Software for management
Map information
34

FIG. 10

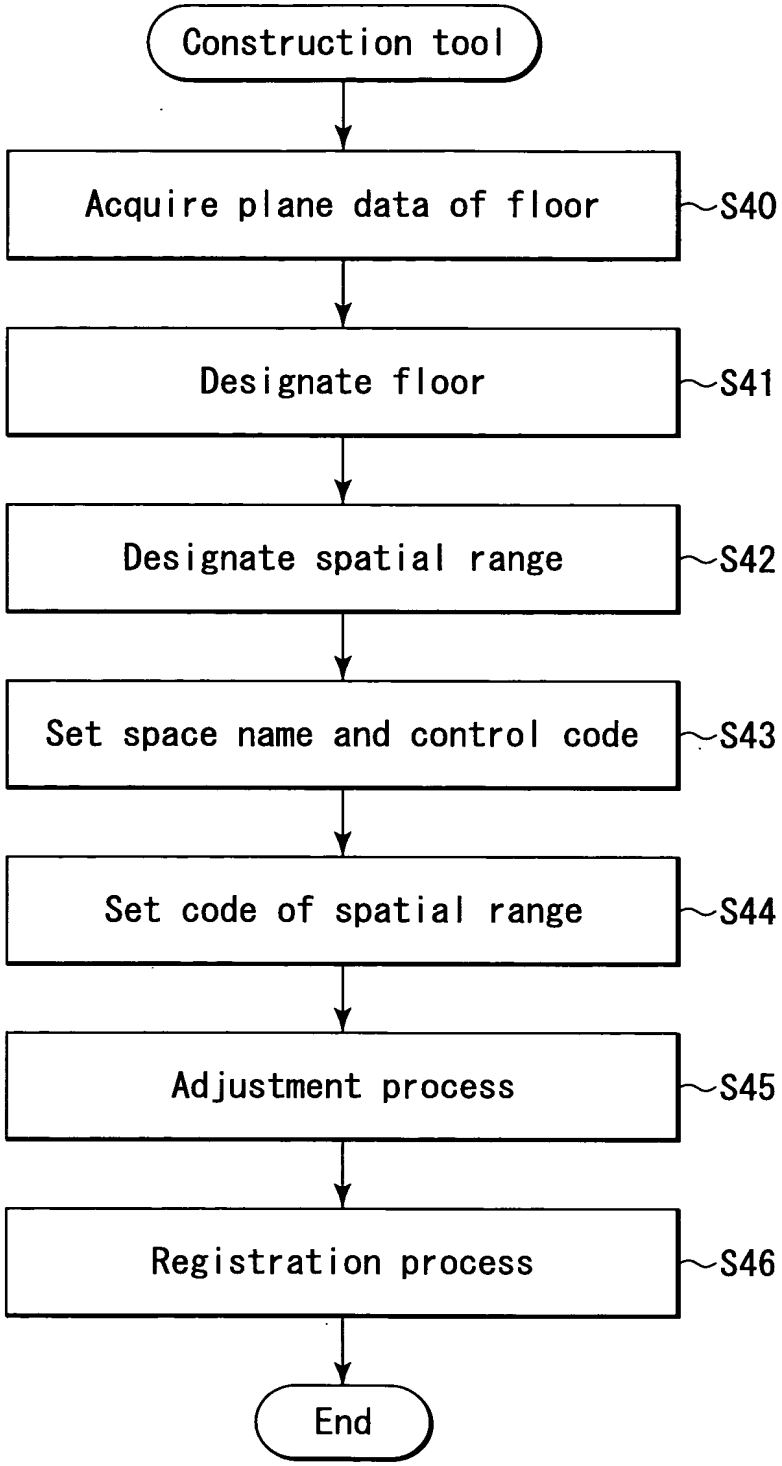
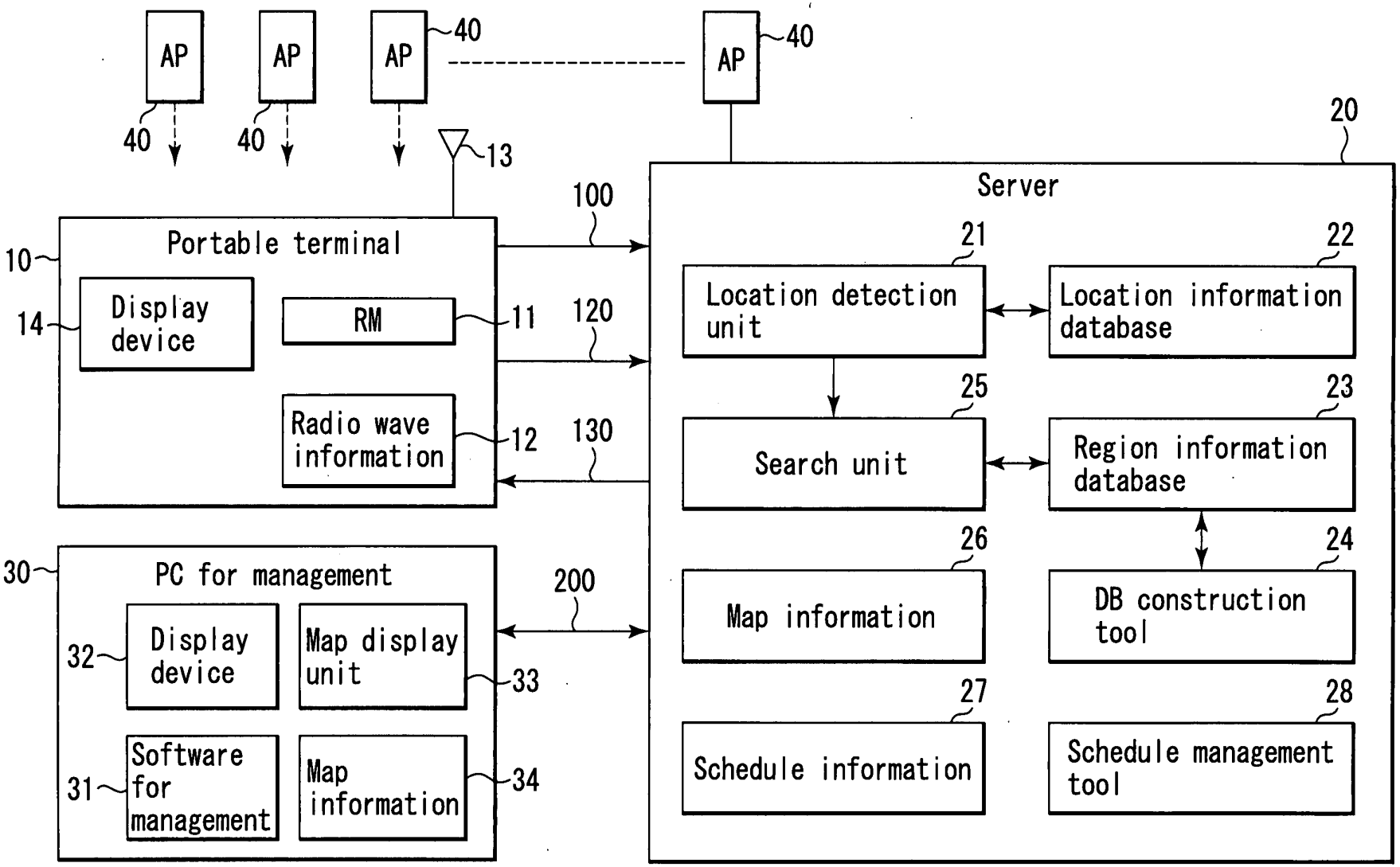

Construction tool
Acquire plane data of floor
S40
Designate floor
S41
Designate spatial range
S42
Set space name and control code
S43
Set code of spatial range
S44
Adjustment process
S45
Registration process
S46
End

FIG. 11


AP
AP
AP
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AP
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40
40
13
20
Server
100
Portable terminal
10
21
Location detection unit
22
Location information database
14
Display device
RM
11
120
25
23
Search unit
Region information database
Radio wave information
12
130
26
24
30
PC for management
200
Map information
DB construction tool
32
Display device
Map display unit
33
27
28
Schedule information
Schedule management tool
31
Software for management
Map information
34

FIG. 12

Date	Time	Range No.	Space name	Business
2003/03/10	09:00-11:00	00138	Office A	Coding
2003/03/10	11:00-12:00	00103	Meeting room A	Progress meeting
:	:	:	:	:

FIG. 13

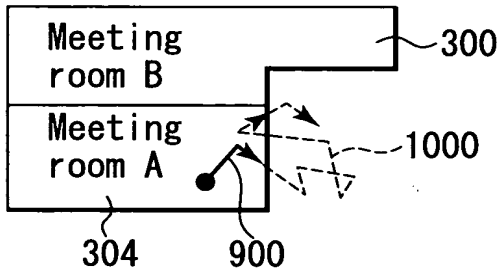

FIG. 14

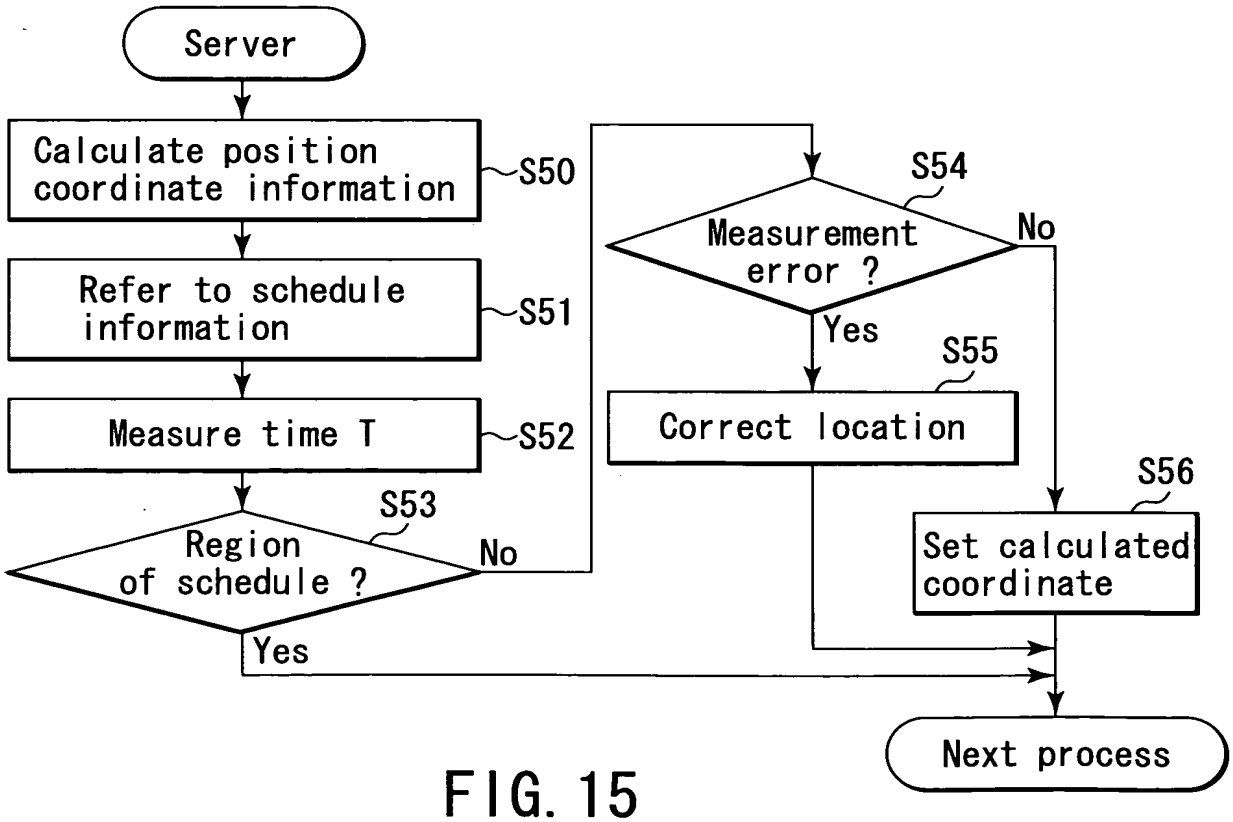

FIG. 15